REMARKS

Claims 1-48 are all the claims presently pending in the application.

It is noted that the claim amendments are made only for more particularly pointing out the invention, and not for distinguishing the invention over the prior art, narrowing the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

Claims 6, 9-16, 19-27, 30-38, 41, and 48 are allowed. Claims 1-5, 7-8, 17-18, 28-29, 39-40, and 42-47 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kondo (U.S. Patent No. 6,259,739) in view of Keesman et al. (U.S. Patent No. 5,805,224).

These rejections are respectfully traversed in the following discussion.

I.   THE CLAIMED INVENTION

The claimed invention is directed to a compressed moving picture re-encoding apparatus that has an input compressed moving picture stream, generated by a compression-encoding of moving picture data, as an input signal, performs re-encoding at a pre-set average bit rate and at a variable bit rate, and has an output compressed moving picture stream whose bit rate has been changed as an output signal.

The apparatus includes means for computing a quantizer step size that is used in the re-encoding. There is also means for inputting the computed quantizer step size and a quantizer step size in the input compressed moving picture stream and outputting a quantizer step size that is used in actual re-encoding.

As discussed beginning at line 23 of page 5 of the specification, conventional systems for the re-encoding of an input compressed moving picture stream have a problem of picture quality degradation because the target number of bits is set based on the number of bits of the input compressed moving picture stream.

In contrast, the present invention presents a number of embodiments that overcome this problem. A key feature of the present invention is that it finds image characteristics using encoding information contained in the input compressed moving picture stream, calculates

quantizer step size setting according to the characteristics, and performs correction for the
quantizer step size using the difference between the target number of bits and the actual
number of bits.

II.   THE PRIOR ART REJECTION

The Examiner alleges that Kondo in combination with Keesman renders obvious claims
1-5, 7, 8, 17, 18, 28, 29, 39, 40, and 42-47. Applicant submits, however, that there are
elements of the claimed invention which are neither taught nor suggested by Kondo, either
alone or in combination with Keesman.

It is first noted that the evaluation must be done through the eyes of "one of ordinary
skill in the art". That is, terminology and diagrams must be interpreted as would one of
ordinary skill in the art. The rejection currently of record fails to evaluate Kondo in this
manner and fails to heed the plain meaning of the claim language.

Because of this different evaluation approach, the rejection currently of record fails to
meet the initial burden of a *prima facie* rejection.

Of particular importance, the present invention addresses a re-encoding apparatus.
Kondo addresses a simple encoding apparatus. To one of ordinary skill, this different
environment clearly precludes Kondo from reading on the plain meaning of the language
claims.

More specifically, because Kondo is a conventional MPEG encoder, it receives
digitized moving pictures and encodes this data into MPEG 2 (e.g., see Abstract).

In contrast, because the present invention is a re-encoder, its input stream is a
compressed moving picture stream. Therefore, Kondo fails to read on this plain language
meaning of the basic difference between a encoder and a re-encoder. One of ordinary skill in
the art would not agree with the Examiner that the input stream of Kondo is a compressed
moving picture stream.

Moreover, the rejection currently of record for claim 1 indicates a basic confusion in
plain meaning relative to the "quantizer step size in said input compressed moving picture
stream". To one of ordinary skill in the art, the input stream in Kondo is not compressed.
Therefore, the input stream of Kondo does not have a "quantizer step size in said input

compressed moving picture stream". Nor does Kondo, therefore, have any module that receives both a calculated quantizer step size and the input data quantizer step size. Accordingly, the Examiner's characterization in the first paragraph of Page 3 of the Office Action would be considered by one of ordinary skill in the art as being blatantly incorrect.

Keesman is introduced for the concept of "quantizer step size" and does not overcome the above-identified basic deficiency of Kondo.

Hence, turning to the clear language of the claims, in Kondo, there is no teaching or suggestion of: "[a] compressed moving picture re-encoding apparatus that has an input compressed moving picture stream, generated by a compression-encoding of moving picture data, as an input signal, performs re-encoding at a pre-set average bit rate and at a variable bit rate, and has an output compressed moving picture stream whose bit rate has been changed as an output signal, said compressed moving picture re-encoding apparatus comprising: means for computing a quantizer step size that is used in said re-encoding; and means for inputting said computed quantizer step size and a quantizer step size in said input compressed moving picture stream and outputting a quantizer step size that is used in actual re-encoding" (emphasis Applicant's), as required by claim 1.

The other independent claims have similar language and include additional limitations that are similarly not met, simply because Kondo does not have a compressed moving picture stream input.

More specifically, it is brought to the Examiner's attention that the complexity aspect of Kondo, as shown in Figures 1 and 8 for the encoder environment is a feedback. That is, the input into code quantity controller 106 is the quantity of output code.

In contrast, because of the difference in environment between a re-encoder in comparision to a coder, the present invention overcomes the problem of the prior art by determining complexity as a feedforward. That is, in the present invention, it is the complexity of the input signal that is used in the complexity aspects that solve the problem. Although the present invention also uses feedback loops, a proper rejection must appropriately address the feedforward aspect of the present invention.

Additionally, the discussion and distinctions below are provided to possibly assist the Examiner to better understand the differences between the present invention and the cited references:

Claim 1

Claim 1 defines a quantizer step size that is used in actual re-encoding.

Kondo does not include, teach, or suggest the information of quantizer step size because in the technique of Kondo, the <u>input is image data</u>. Keesman discloses at column 7, line 14 et seq., that the calculation of a quantizer step size is based on a coefficient bit stream q_2 and an overhead bit stream v_2. However, q_2 and v_2 are only used to obtain a total number of bits. Keesman also discloses the calculation of complexity, but a quantizer step size of an input bit stream is not used in doing so.

Therefore, it must be concluded that the present invention clearly includes different elements from the combination of the cited references and (<u>arguendo</u>) those ordinarily skilled in the art would not consider the present invention obvious over the Examiner's urged combination of the cited references.

Claim 2

In addition to claim 1, claim 2 selects a larger quantizer step size from the quantizer step size that is used in re-encoding and the quantizer step size in the input compressed moving picture stream. This description cannot be found or reasonably suggested in Kondo or Keesman.

Kondo allocates larger quantity of code to a frame with a larger amount of information (column 21, lines 15-37), but this is far different from <u>selecting a larger quantizer step size</u> in the present invention. "Selecting a larger quantizer step size" avoids unnecessarily reducing a quantizer step size and stops the increase of the amount of code. Thus, the two processes are different from each other.

Claim 3

In addition to claim 1, claim 3 <u>adjusts a quantizer step size according to the characteristics of image</u>.

Kondo discloses at column 11, lines 38-46, the step of calculating the amount of code and the step of calculating the average of quantizer step sizes, but these steps have nothing to do with the recitations of claim 3.

Claim 4

In addition to claim 3, claim 4 <u>adjusts a quantizer step size according to a ratio</u> of a complexity measure in a prescribed period or the number of pictures to a complexity measure of an object of re-encoding, using the quantizer step size or the amount of bits of the input bit stream or both.

Kondo discloses at column 18, lines 19-28, the calculation of complexity using the amount of code and quantizer step sizes and, at column 26, lines 18-25, further discloses the adjustment of quantizer step sizes using a ratio between a target bit rate and a real bit rate. These are different from the present invention which uses the <u>information of quantizer step size of an input bit stream</u>.

Further, Kondo adjusts a quantizer step size by a ratio of bit rates in one interval, but the present invention does it by a <u>ratio of two complexity measures</u>.

Claim 7

In addition to claim 1, claim 7 computes the maximum bit rate quantizer step size and decides a quantizer step size.

Kondo controls the amount of code in a range between the predetermined maximum bit rate and the predetermined minimum bit rate (column 22, lines 6-19). This is different from the present invention that uses the information of a quantizer step size of an input bit stream.

The other rejected claims have at least some of the same features as described above, and thus are similarly non-obvious over the cited references.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by Kondo. Therefore, the Examiner is respectfully requested to withdraw this rejection.

III.   FORMAL MATTERS AND CONCLUSION

In view of the foregoing, Applicant submits that claims 1-48, all the claims presently pending in the application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the application to be other than in condition for allowance,
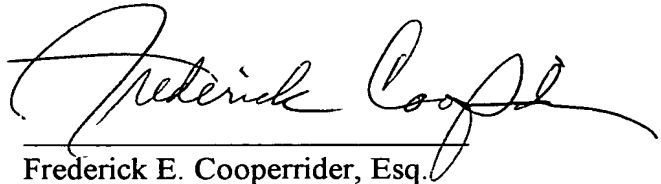
the Examiner is requested to contact the undersigned at the local telephone number listed

below to discuss any other changes deemed necessary in a <u>telephonic or personal interview</u>.

The Commissioner is hereby authorized to charge any deficiency in fees or to credit

any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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